APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/086,712	03/04/2002	Norbert Frisch	1454.1227	2822

21171   7590   01/05/2005

STAAS & HALSEY LLP
. SUITE 700
1201 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER
MANOSKEY, JOSEPH D

ART UNIT	PAPER NUMBER
2113	

DATE MAILED: 01/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/086,712	FRISCH, NORBERT
	Examiner	Art Unit	
	Joseph Manosk y	2113	

-- Th MAILING DATE of this communication app ars on th cover sheet with th correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>04 March 2004</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-21 and 23-25</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-21 and 23-25</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>04 March 2002</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   The examiner notes that in the claims there is no claim 22, therefore the total

number of claims is 24 and not 25.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

3.   Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite

for failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention.

4.   Claim 23 recites the limitation "the process" in last line of the claim. There is

insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

> (b) the invention was patented or described in a printed publication in this or a foreign country or in public
> use or on sale in this country, more than one year prior to the date of application for patent in the United
> States.

6.   Claims 1-11, 13-21, 23, and 25 are rejected under 35 U.S.C. 102(b) as being

anticipated by Rishi et al, U.S. Patent 5,953,530, hereinafter referred to as "Rishi".

7.   Referring to claims 1 and 23, Rishi teaches a method of maintaining status of

memory locations that are allocated and deallocated. The method uses the status to

determine memory leaks that can be caused by routines terminating without freeing up

the memory, this is interpreted as a method for ascertaining an assignability of at least

one operating means in a computer system after at least one process accessing the

operating means in a computer system after at least one process accessing the

operating means has stopped (See Col. 2, line 55 to Col. 3, line 20).

Rishi discloses the method keeping a status and comparing last known values

with current values, this is interpreted as preparing a first state vector for the operating

means before the process is put into operation, preparing a second state vector for the

operating means after the process has stopped, and comparing the first and second

state vectors for discrepancies in order to ascertain whether the stopping of the process

has resulted in unassignable operating means (See Col. 2, line 55 to Col. 3, line 20, and

Col. 13, lines 61-63).

8.   Referring to claims 2, 3, and 13, Rishi discloses the method run on a shared

memory system (See Col. 10, lines 55-60).

9.   Referring to claims 4 and 14, Rishi teaches the method dealing with detecting

access to memory that is user memory, this is interpreted as wherein the process is a

user process (See Col. 6, lines 47-55).

10.   Referring to claims 5 and 15, Rishi discloses the method having memory leaks

because a routine terminates without freeing up the memory, this is interpreted as

wherein stopping arises as a result of unintentional termination of the process (See Col.

3, lines 10-20).

11.   Referring to claims 6 and 16, Rishi teaches the method accumulating information

regarding address and size of memory, this interpreted as wherein the two state vectors

each comprise a plurality of parameters which relate to the assignability of the at least

one operating means (See Col. 7, lines 25-35).

12.   Referring to claims 7 and 17, Rishi discloses the method run on a shared

memory system (See Col. 10, lines 55-60). Rishi also discloses the method

accumulating information regarding address, size of memory, and area, this is

interpreted as the state vectors are selected from the group consisting of amount of

memory used, address of used memory portion, and identification of portion of memory

that is available (See Col. 7, lines 25-35).

13.   Referring to claims 8 and 18, Rishi teaches the method containing the thread ID, this is interpreted as at least one of the first state vector and the second state vector records, using a process identifier, the process which is accessing the operating means (See Col. 13, lines 12-25).

14.   Referring to claims 9 and 19, Rishi discloses the method run on a shared memory system, this is interpreted wherein the method takes into account at least one of all physical operating means and all virtual operating means (See Col. 10, lines 55-60).

15.   Referring to claims 10 and 20, Rishi discloses the method run on a shared memory system, this is interpreted as wherein some of the operating means are taken into account, in particular the shared operating means (See Col. 10, lines 55-60).

16.   Referring to claims 11 and 21, Rishi teaches the state of threads that is stored being the operating system state, this is interpreted as wherein at least one of the first state vector and the second state vector is recorded by testing an operating system service (See Col. 12, lines 38-40).

17.   Referring to claim 25, Rishi teaches a method of maintaining status of memory locations that are allocated and deallocated. The method uses the status to determine memory leaks that can be caused by routines terminating without freeing up the

memory. The method is stored and run on a computer system, this is interpreted as a

computer readable medium storing at least on program for controlling a computer to

perform a method of accessing a memory after a program has unintentionally stopped

(See Col. 2, line 55 to Col. 3, line 20).

Rishi discloses the method keeping a status and comparing last known values

with current values, this is interpreted as preparing a first state vector for the operating

means before the process is put into operation, preparing a second state vector for the

operating means after the process has stopped, and comparing the first and second

state vectors for discrepancies in order to ascertain whether the stopping of the process

has resulted in unassignable operating means (See Col. 2, line 55 to Col. 3, line 20, and

Col. 13, lines 61-63).

Claim Rejections - 35 USC § 103

18.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

19.   Claims 12 and 24 rejected under 35 U.S.C. 103(a) as being unpatentable over

Rishi in view of Kidder et al., U.S. Patent Application Publication 2004/0031030,

hereinafter referred to as "Kidder".

20.   Referring to claims 12, Rishi teaches a method of maintaining status of memory

locations that are allocated and deallocated. The method uses the status to determine

memory leaks that can be caused by routines terminating without freeing up the

memory (See Col. 2, line 55 to Col. 3, line 20).

Rishi discloses the method keeping a status and comparing last known values

with current values, this is interpreted as preparing a first state vector for the operating

means before the process is put into operation, preparing a second state vector for the

operating means after the process has stopped, and comparing the first and second

state vectors for discrepancies in order to ascertain whether the stopping of the process

has resulted in unassignable operating means (See Col. 2, line 55 to Col. 3, line 20, and

Col. 13, lines 61-63).

Rishi does not disclose rebooting the process if the first and second state vectors

match and starting at least one mechanism for unblocking the operating means if the

first and second state vectors do not match, however Rishi does teach that teach

determining memory leaks that cause memory locations to be no longer accessible

(See Col. 3, lines 10-20). Kidder teaches restarting a process or rebooting the system

in the event of a memory leak (See paragraph 0554).

It would have been obvious to one of ordinary skill in the art at the time of the

invention to combine the restarting of the application or rebooting of the system of

Kidder with the method to determine memory leaks of Rishi. This would have been

obvious to one of ordinary skill in the art at the time of the invention to do because the

reboot of the system will free up the leaked memory (See Kidder, paragraph 0554).

21.   Referring to claim 24, Rishi teaches all the limitations (See rejection of claim 23)

except restarting the process if the first and second state vectors match and rebooting

an operating system if the first and second state vectors do not match, however Rishi

does teach that teach determining memory leaks that cause memory locations to be no

longer accessible (See Col. 3, lines 10-20). Kidder teaches restarting a process or

rebooting the system in the event of a memory leak (See paragraph 0554).

It would have been obvious to one of ordinary skill in the art at the time of the

invention to combine the restarting of the application or rebooting of the system of

Kidder with the method to determine memory leaks of Rishi. This would have been

obvious to one of ordinary skill in the art at the time of the invention to do because the

reboot of the system will free up the leaked memory (See Kidder, paragraph 0554).

Conclusion

22.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure. The following are closely related examples of memory leak

detection systems.

> U.S. Patent 5,689,707 to Donnelly
>
> U.S. Patent 5,842,019 to Kolawa et al.
>
> U.S. Patent 6,167,535 to Foote et al.

U.S. Patent 6,560,773 to Alexander, III et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Manoskey whose telephone number is (571) 272-3648. The examiner can normally be reached on Mon.-Fri. (7:30am to 4pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on (571) 272-3645. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JDM
December 22, 2004

NADEEM IQBAL
PRIMARY EXAMINER